DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-014513
Date Inspected: 28-May-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 1000
OSM Departure Time: 1830
Location: Clackamas, OR

CWI Name:	M. Gregson, J. Salazar, G. Mundt		**CWI Present:**	☑ Yes	☐ No
Inspected CWI report:	☐ Yes	☑ No ☐ N/A	**Rod Oven in Use:**	☐ Yes ☐ No	☑ N/A
Electrode to specification:	☑ Yes	☐ No ☐ N/A	**Weld Procedures Followed:**	☑ Yes ☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No ☐ N/A	**Verified Joint Fit-up:**	☑ Yes ☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No ☐ N/A	**Approved WPS:**	☑ Yes ☐ No	☐ N/A
			Delayed / Cancelled:	☐ Yes ☑ No	☐ N/A

Bridge No: 34-0006
Component: Hinge K Pipe Beams

Summary of Items Observed:

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

Hinge-K Pipe Beam Assembly 101A-4

The QA Inspector observed that OIW had previously removed this assembly from the welding fixture or positioner and had placed on the production Bay 3 shop floor. The QA Inspector observed that OIW production had removed the 2 piece carbon steel shrouds, which had set on the rollers during the welding of the Complete Joint Penetration, Weld Joint # W4-01. The QA Inspector observed that OIW production had removed the second set of yellow painted shrouds and banding, which is used to protect the stainless steel overlay during transport. The QA Inspector observed that OIW production had removed and discarded the yellow thermal blanket which was previously placed between the yellow shrouds and the stainless steel overlay. The QA Inspector noted that this blanket had been placed to protect the stainless steel overlay during welding of the CJP and a barrier between the yellow painted carbon steel shrouds and stainless steel overlay. The QA Inspector noted that these items had been removed to visually inspect the stainless steel overlay for any damage which might have been caused during the welding of the CJP.

The QA Inspector observed that OIW QC Inspector Jose' Salazar was present on the shift and had started to perform a visual inspection on the overlay. QC Inspector Salazar explained that after the above mentioned items were removed, OIW production had cleaned the overlay surface, prior to notifying QC to perform a visual inspection. QC Inspector Salazar explained that production had utilized plastic type hand held scrapers to remove

areas of thermal blanket which had stuck to the overlay, which was caused by the pressure from the rollers, which were used to rotate the assembly, during the welding of the CJP. QC Inspector Salazar explained that once the thermal blanket was scraped off, OIW production then cleaned the entire overlay surface with acetone cleaner, to remove any additional areas of stuck thermal blanket.
The QA Inspector observed that during the Visual inspection being performed by QC Salazar, that he had marked additional areas for OIW production to clean, prior to accepting. The QA Inspector observed that this was small areas of weld spatter, which had been deposited during the FCAW of the weld repairs on the CJP. The QA Inspector observed that the spatter was located on the bevel prepped edge of the overlay, near the repair areas. The QA Inspector observed OIW production remove the spatter with the plastic scrapers and then cleaning with acetone. Once this was complete, QC Inspector Salazar explained that the Visual inspection was complete and acceptable. The QA Inspector then performed a Visual inspection on the overlay surface and the surface appeared to be in compliance with the contract requirements.
QC Inspector Salazar explained that OIW production will cut and place a new thermal blanket and place around the overlay and then reattach the 2 yellow painted shrouds after the new blanket is placed. See attached pictures below.

Hinge-K Pipe Beam Assembly 101A-2:
The QA Inspector arrived in Vancouver at approximately 1430, as requested by OIW to perform a paint inspection on the HPB 101A-2. Upon arrival, the QA Inspector met with OIW paint Foreman Mike Smith and one painter. Mr. Smith explained to the QA Inspector that he will be performing the required tests on the paint (Carboxane 2000 White), per the contract requirements. The QA Inspector observed that OIW had applied the paint to the inside of the HPB which had been previously masked on the outside, for the Critical Weld Repair # 026. The QA Inspector observed that OIW had also applied paint to the outside of the HPB, which had been blemished during the welding performed on the CWR. Mr. Smith explained that the areas were sweep blasted, prior to the paint application. The QA Inspector observed Mr. Smith performing Dry Film Thickness (DFT) readings utilizing a Defelsko Positector 6000 digital paint meter. The QA Inspector observed that Mr. Smith was performing the test on random areas of the outside which had the application of paint. The QA Inspector observed that the DFT readings were in compliance to the required 8.4-10.8 mil (200-325 um) range. The QA Inspector then observed Mr. Smith perform an adhesion test on the area of primer which had previously failed. The QA Inspector observed Mr. Smith attaching a hydraulic ram to a previously placed anode. The QA Inspector observed that the anode pulled from the glue portion at 4.2 Mpa and appeared to be in compliance with the 4 Mpa minimum required, per the contract. After observing Mr. Smith performing the above mentioned tests, the QA Inspector performed Visual testing on the paint application and it appeared to be in compliance with the contract requirements.
Mr. Smith then provided the QA Inspector with a copy of the Paint System Checklist which was used during the final inspections. See attached pictures below.

Material, Equipment, and Labor Tracking (MELT)
QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project. The QA Inspector observed at Oregon Iron Works Clackamas: 4 OIW production personnel and 2 QC Inspectors. The QA Inspector observed at Oregon Iron Works Vancouver: 2 painters.

WELDING INSPECTION REPORT

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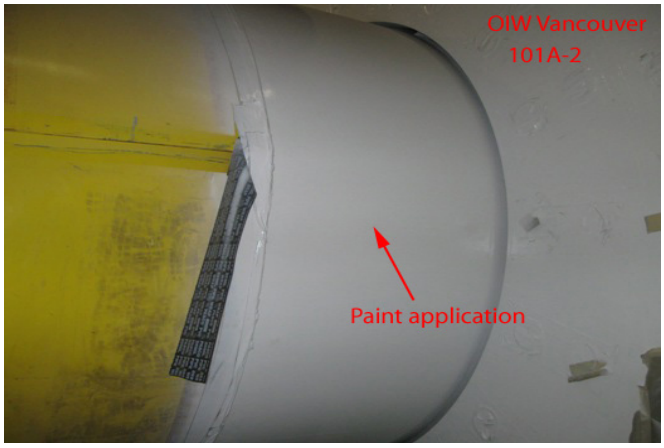

Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Vance,Sean	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer